DOCUMENT RESUME

ED 187 108 FL 011 249

AUTHOR Gensler, Orin
TITLE Non-Syntactic Antecedents and Frame Semantics.
PUB DATE 77
NOTE 15p.; Paper presented at the annual meeting of the Berkeley Linguistics Society (3rd, Berkeley, CA, February 19-21, 1977)
AVAILABLE FROM Berkeley Linguistics Society, University of California, Berkeley, CA 94720 ($8.20 for entire Proceedings)

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS Grammar; *Language Processing; Language Research; *Linguistic Theory; *Pronouns; *Semantics; Sentence Structure; Speech Communication; Surface Structure; Syntax
IDENTIFIERS *Anaphora

ABSTRACT

A polemic is made for frame semantics and the linguistic phenomenon of anaphoric reference without noun phrase (NP) antecedent is examined within this frame. Non-syntactic anaphora is that which does not point out into the real world but rather points back into the discourse in a frame which has been built up between the speaker and hearer in a discourse. (For example, "How do you like 'that'?" "That" is the anaphor whose meaning and grammatical behavior are interpretable only with respect to an antecedent.) Such anaphora, the situations in which it appears, and its various types of non-syntactic references, is sketched in a rough typology. Three plausibility arguments for the legitimacy of non-syntactic antecedents are presented. Non-syntactic anaphora is more common in speech than in writing. Whereas the total communication situation provides the referent in speech, this must be syntactically expressed in writing. The several properties of the use of "it," "this," and "that" are presented in detail. The primary criteria distinguishing the use of each are: (1) they way the speaker feels himself to be associated with the concept being referred to; (2) whether the anaphora themselves are antecedents for "it"; and (3) speaker changes within the discourse. The proposal that all anaphora is non-syntactic is accompanied by objections to this hypothesis. (PMJ)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

"PERMISSION TO REPRODUCE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY
Kenneth Whistler

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

ED187108

NON-SYNTACTIC ANTECEDENTS AND FRAME SEMANTICS[0]

Orin Gensler
University of California, Berkeley

I. General Discussion

I.A. Introduction

This paper has 2 purposes: to make a polemic for frame semantics, and to present a linguistic phenomenon which can be discussed naturally in frame terms. The phenomenon is commonplace, yet one which has been by-passed by generative linguistics. What kind of analysis can or should be given for sentences like these:

1) If this be treason, make the most of it.
2) How do you like that?
3) It's simply shocking.
4) OK, where should we go with this? (in response to a suggestion at an administrative meeting)
5) It fits. And I ought to have figured it out myself.
6) The thing here would be to think of it as a network -- you set it up once and then you just point to it. (Attested in speech)

We like to think of the culprit pronouns "it, this, that" as being anaphors: elements whose meaning and grammatical behavior are interpretable only with respect to an antecedent. Typically the antecedent is "supposed to be" an NP occurring in the sentence itself or in the foregoing discourse, to which the anaphor is (at least sloppily) coreferential; this could be termed "syntactic anaphora". Generative Semantics has also countenanced antecedents which are not explicitly present on the surface, but only at a deeper level; thus Ross, in analyzing

7) Dr. Grusel is sharpening the spurs, but it may take him hours to bring it about.

analyzes "it" as referring to a deeper-level antecedent along the lines of "The spurs are sharp". Deictic anchoring offers another way to provide anaphors with antecedents, by pointing the anaphor into the real-world environment surrounding the communications act itself ("deixis ad oculos").

But examples like 1)-6) above do not fit into any of the above categories. Pre-theoretically, the antecedent here is very broadly "the foregoing" or "the matter in question". Bolinger, in discussing "Ambient It", has similarly characterized "it" as "a nominal with the greatest possible generality of meaning; 'it' embraces weather, time, circumstances, whatever is obvious by the nature of reality or the implications of context." Thus:

8) It's oozing oil all over here. (Bolinger; also 9,10)
9) How is it in your room?
10) Come down here in the basement and look at the way it's dripping water from every pipe. You'd swear they were leaks, but it's just condensation.

Most of Bolinger's examples involve deixis, and do not depend on any previous discourse; whatever aspect of the ambience is being picked out by "it" is usually clear from the sentence itself.

The class of phenomena which I would like to examine concerns anaphora which does not point out into the real world, but rather back into the discourse frame[2] which has been evoked by a written work or built up "in the air" to link speaker and hearer. I will refer to this class of phenomena as "non-syntactic anaphora", and to the anaphors (somewhat messily) as "non-syntactic anaphors" or "anaphors with non-syntactic antecedents". (The "non-syntactic" nature of the anaphora will be justified and clarified in the course of this paper.) It should be noted that the line between "deixis ad oculos" and non-syntactic anaphora is not as clean as it might be. An example where the distinction seems well-blurred:

11) A: I'm making something special for dinner.
B: I can tell. It smells heavenly. ("it" = "something special for dinner"; or the physical smell; or "ambient it"?)

Moreover, an intriguing possibility is that even "deixis ad oculos" might operate by pulling the physical environment into the discourse frame![3]

I.B. A crude typology

Non-syntactic anaphors can take a great many types of antecedents. What follows is a crude attempt to rough out some antecedent classes. Thus non-syntactic antecedents can be:

a.) The whole frame:
12)=4) OK, where should we go with this?
13) It means we won't have a prayer in the next election. (politicians discussing repercussions of a scandal)
b.) Almost any sub-element within a frame, in suitable context:
14) Remember Mary's party? Wasn't he just the neatest guy you ever saw?
c.) A new frame evoked by the use of a word or phrase:
15) A: I got my income tax forms today.
B: Yeah, you know that's our biggest national problem. (i.e., tax abuse, roughly)
16) (I said this sentence in connection with a recent zany Peter Pan production, featuring a fat dumpy Tinkerbelle. I heard someone mention Tinkerbelle. I said "Fat-lady Tinkerbelle", paused as the whole play flooded into my mind, and continued:)
Fat-lady Tinkerbelle ... it was wonderful!
d.) The discourse itself:
17) This could go on for days. (an interminable discussion)
e.) A proposition directly or indirectly expressed in discourse:
18) It won't work.
19) I don't know about that.

f.) The speech-act being performed:
20) A: Is Calvin Coolidge here?
B: That's a funny question.
21) A: 50 pushups, soldier!
B: That's unreasonable, Sergeant!
22) A: I promise never to touch alcohol again.
B: You expect me to take that seriously?
g.) Linguistic elements referred to as objects:
23) Fine, but you didn't pronounce it correctly.
(teacher's response in language class)
24) It's "Berkeley", John, not "Barkley".
25) ... and ... I can't say it ...
h.) A presupposition of a sentence in the discourse:
26) A: Do you really like that perverted troglodyte Reagan?
B: You can't say that! It's unAmerican! -- OR --
That's a lie! He's a great man.

I.C. Some weird examples

Non-syntactic anaphora can get much stranger than the above examples might suggest. For example:

27) You can't refer to a rock as "he". It has to be a person.
(It = "what you can refer to as 'he' ")
28) They continued doggedly upriver. Now it was definitely "up".
(It = the appropriate word to use; or, the direction?)
29) You know surgeons --- they always want to do it the way they (stress) want to do it. (It = things = any medical procedure or matter)

Here would also be the place to mention the frame-deictic usage of here/there, then/now, and which, which I will not further discuss in this paper:

30) OK, wise guy, what would you do then?
31) What's going on here seems to be a triple violation of a Ross Constraint.
32) He told me to leave, which was { all right with me. / just what I'd been waiting for.

I.D. Plausibility arguments for non-syntactic antecedents

The examples in class f.) above (speech-acts) are especially pertinent in establishing the legitimacy of the notion of non-syntactic anaphora. Consider 21) above. Here the anaphoric pronoun refers to the entire sentence viewed as a speech act --- i.e., including the sentence's performative superstructure. If, as is standardly assumed, anaphors must refer to a syntactic NP, then every sentence (including performative superstructure) must be dominated by an NP node, a formally unacceptable result in a generative theory with a context-free base generated from the single symbol S. The alternative is either: Allow it/this/that to refer back to either NP's or S's, which is ad hoc; or, allow non-syntactic antecedents for these pronouns.

A second argument concerns sentences like these, where the inherently context-bound notion of point-of-view is critical:

33) Danny seems to understand things pretty well, but it doesn't make sense to me at all.
34) The band is coming onto the field. They're in perfect step.

Positing a syntactic antecedent for "things" and "it" leaves hanging the question of why they differ in number. Positing a non-syntactic antecedent opens up the possibility of taking 2 points of view on an antecedent in a frame, holistic (singular concord) or fragmentary (plural).

Similar examples can be drawn from Semitic languages, where relative clauses can show curious discrepancies of person-agreement with the head noun or pronoun when the head is 1st or 2nd person. Thus Bloch cites (in translation) these sentences from Arabic and modern Hebrew, where again we have 2 different points of view vis-à-vis an entity in a frame, but along the dimension "person":

35) You are a man who forgives (2nd-pers) the greatest sins.
36) You are a nobleman whose (3rd-pers) good name cannot be discredited.
37) We were the first generation to be redeemed, Israeli children who (3rd-pers) did not know what anti-Semitism is, whose (1st-pers) language was Hebrew. (newspaper, informal style)

A third argument. We certainly cannot "syntax-ify" non-syntactic anaphora by analyzing it/this/that as in some sense derivable (by deletion?) from something like "this situation", "what you said", "things", etc. Such an approach not only embroils you in defending a particular word-choice (why "situation" and not "state"?), but also passes the anaphoric buck from it/this/that to a marginally "fuller" and more specified NP. In fact, such phrases don't even come near covering the huge semantic range of non-syntactic anaphora.[4]

I.E. Written and spoken language

Conventional wisdom has it that linguistic analysis deals primarily with spoken language. This maxim lurks between the lines in many linguistics articles, and bursts into the open in the classroom: "That sounds terrible." "Can you actually say that?" Yet many of the sentences studied in linguistics articles are literally "unspeakable". In fact written and spoken language have different jobs to do, and correspondingly different notions of what is "grammatical". A related issue is the question of "formality". Thus while contexts for language use can run the gamut smoothly from very informal (street slang, comic books) to extremely formal (philosophy articles, high-church sermons), both written and spoken language can have any degree of formality. To a first approximation, and to limit the discussion, I will obscure the issue by equating "formal" with "written" and "informal" with "spoken" for the most part in the following discussion.

Non-syntactic anaphora, I believe, is far more a phenomenon of spoken language than of written. This dimension cannot be captured at all in current generative theories. A frame analysis, on the other hand, can treat the spoken-written dichotomy both in general and specifically vis-à-vis non-syntactic anaphora --- and do so in a non-trivial, interesting, and natural way.

A frame approach would view linguistic communication as the setting up and manipulating of a shifting series of shared frames between the speaker/writer and his hearer/reader. A speaker and a writer go about this aim differently, and a reader and a hearer operate under different constraints:

1. Writing is expressly taught; there are no "native writers" of English. And teaching writing is often bound up with teaching prescriptive normative grammar and rhetoric. Thus frequently writers are explicitly aware of "using grammar". None of this holds for speakers. Hence:
2. A writer usually produces language under careful and conscious control; for speech this is atypical.
3. A writer almost always operates in contexts where he is expressly judged on how effectively he has used language, be it by his public, his editor, or his professor. Speakers are much less often judged purely on their language use.
4. Literary cultures usually attach a higher prestige value and more significance to written than spoken language. (Exception: ancient Arabia)
5. A writer takes responsibility for what he has written in a far more binding way than does a speaker.
6. A specimen of written language is effectively permanent, and the writer knows it. With spoken language this is the exception (tape recordings).
7. The same single written text will be inputted again and again word-for-word identically to an indefinite number of readers. The opposite holds of speech (at least unrecorded and unbroadcast speech).
8. A reader can, if he wishes, refer back to the entire foregoing text. A hearer cannot --- speech is linear.
9. Exactly the same is true of a writer versus a speaker.
10. A speaker can correct himself and reformulate in mid-discourse. A writer chooses his words once and for all.
11. A writer, unlike a speaker, usually does not produce language under real-time constraints. (Exceptions: taking notes; newspaper reporting)
12. A speaker can interact with the hearer as he talks. But a similar writer/reader dialogue is much less common. (e.g., a reading of first drafts)
13. Written language almost never has any deictic anchoring in the perceptible real world. Exceptions:
    a. A sign on a housing complex, "If you lived here you'd be home now."
    b. Comic books, where the presence of pictures reintroduces a physical pseudo-real world to the text.

The natural corollary of these differences is that writers and speakers handle text frames in different ways. A speaker, under real-time conversational pressure, often sets up and manipulates his frames somewhat haphazardly, trusting to real-time feedback to judge how well the hearer's evolving frame matches his own. The speaker's frame specification can be somewhat vague, for: a. He needn't take responsibility for his spoken vagueness.
b. The hearer may not notice the vagueness, or care, or need to know more precisely.
c. The hearer can demand immediate clarification should he so choose.

A writer, under the very different pressure of using language "well and effectively", and with no comparable real-time constraints forcing him to cut corners, can and should do a much more careful job of handling frames. The reader cannot demand that vagueness be sharpened; the writer should therefore build into his text just the vagueness that he deliberately intends. On the other hand, a reader can do what a hearer cannot: reread and "replay" verbatim any of the text he wishes, so as to enrich or clarify what is going on in his present frame. Poets and textbook authors, whose writing has its raison d'être to evoke for the reader new frames and new <u>kinds</u> of frames, <u>expect</u> to be reread and re-re-read.

Why, then, is non-syntactic anaphora more common in speech than in writing?

1. Non-syntactic anaphora tends to be vague, which is far more acceptable in speech than in writing.
2. Non-syntactic anaphora can be a short-cut alternative to a mountain of verbiage, as in

   38) I don't have to go into <u>this</u>.
   39) You get <u>the idea</u>.

   if (for whatever reason) the speaker decides that the hearer groks what's going on. But a writer, conscious of posterity and clarity and his unknown heterogeneous public, is less inclined to short-cuts.
3. In a written text, we very often scan back over the words trying to find a syntactic antecedent for a puzzling anaphor (typically "it"). But such a procedure can founder badly with non-syntactic anaphora. By contrast, in speech situations a hearer can usually interrupt and ask the speaker to clarify <u>any</u> unclear anaphor, syntactic or not.

<u>II. It, This, That</u>

In this section I will discuss some of the properties of the use of it/this/that as non-syntactic anaphors. The three can be used very similarly:

40) That's/This is/It's exactly what the doctor told me to do.

And there are evident but subtly elusive differences in usage.

II.A. Association with speaker

Probably the primary criterion distinguishing the use of it/this/that is the way the speaker feels himself to be associated with the concept being referred to.[5] Using "this" associates the speaker and the concept in some way; using "that" typically separates the speaker and the concept, and often identifies the hearer with the concept; using "it" makes the speaker's separateness from the concept more or less irrelevant. Thus:

41) This is exactly what we need. (Said by company VP to chief scientist about the latter's new proposal; the VP gets himself into the act with "this".)
42) That's exactly what we need. (VP assigns credit where credit is due, ascribing the proposal to the scientist.)
43) That's a crazy pipedream. (Same context)
44) ??This is a crazy pipedream.
45) It's a crazy pipedream, Jones, and you know it.

One interesting consequence of the association-with- speaker dimension has to do with tense usage. If the concept referred to anaphorically is inherently anchored in time, then there often is a tendency to use "this" with tenses that overlap the present (Present and Present Perfect), and "that" with other tenses.

46) That is/ This is/ That was/ ??This was very nice of you.
47) It/ This/ *That has been most enlightening.
48) But this/ *that could go on for days! (the present discussion)
49) Ah, that/ *this was long ago.

II.B. Anaphors as antecedents

The anaphors this/that can themselves be antecedents for "it":

50) Gentlemen, this/ *that/ *it is getting us nowhere. And worse, it's counterproductive. (the present discussion)

In this sentence, "it's" must be anaphoric to "this", since "the present discourse" cannot be directly referred to with "it".

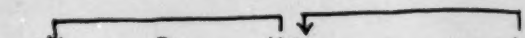
II.C. Speaker changes

A very common instance of non-syntactic anaphora at work in speaking is when the "conversational ball" changes hands --- specifically, either in Speaker A's last sentence or Speaker B's first sentence. Speaker A, for his part, may use it/this/that in a quick summary of what he has just said, pointing out indirectly that what he said does comprise and was intended to comprise a unitary concept of some sort. Thus:

51) A: (After a roundabout proposal) Anyway, it's a suggestion.
B: You know, this sounds like a really good idea.

Speaker B, picking up the conversation, uses it/this/that immediately in his first sentence to establish a pointer into A's frame

while that frame is still "hot", indicating that he wishes to retain (at least) one specific part of A's frame and use it in his own talking. B can then refer anaphorically back to that pointer, as discussed in II.B. above. Schematically:



II.D. Preceding-proposition anaphora

Anaphora with this/that tends to be quite a bit more definite and "referential" than with "it". For example, this/that often refers to the preceding proposition, attitude, concept, etc. expressed over the preceding couple of sentences, or paragraph, or the last 10 minutes of discourse. Thus:

53) This/ *It concludes the proof.
54) A: How long will the trip take?
B: About 7 days altogether. That's/ *It's assuming we can break through the blockage in the river.

II.E. Total-frame anaphora

Sometimes "it" is more appropriate than "this/that" in referring anaphorically to the entire frame. This usage seems a frame analogue of "ambient it", as "a nominal with the greatest possible generality of meaning". Thus:

55) A: What? B: It doesn't really matter.
56) "It fits," Jerode said heavily. "And I ought to have figured it out myself." (After realizing the "terrible truth")
57) This is the world I dream of for us all. Well, brothers, can we do it? (At a revival meeting)

III. Theoretical Implications

III.A. Against "Abstract Syntax"

The complex underlying structures of Abstract Syntax and early Generative Semantics arose in no small measure from arguments involving anaphoric pronouns which lacked surface-structure antecedents. I repeat here sentence 7) as 58):

58) Dr. Grusel is sharpening the spurs, but it may take him hours to bring it about.

This sentence figured prominently in Ross's demonstration on syntactic grounds that underlying the surface verb "sharpen" was the deeper CAUSE (BE SHARP). Ross asks, "What is the antecedent of ... 'it' ...? Evidently, it must be some clause like 'The spurs are sharp.' "

If "it" may take a non-syntactic antecedent, the above argument is much weaker. Consider:

59) Every day Sylvia sticks another pin in her voodoo doll of Idi Amin. It may take her a while to bring it about, but Big Daddy doesn't have a prayer.

Here the antecedent of "it" is something like "Idi Amin's death", which as far as I can see is plucked out of the frame and cannot be pulled out of underlying syntactic/semantic structure. Or, in terms of discourse implicature, in this context only "Big Daddy doesn't have a prayer" implies "Big Daddy will die", thereby providing a non-syntactic antecedent for "it". The analysis necessarily draws on the established frame of primitive culture and voodoo dolls and supernatural murder.

The phenomenon exemplified in 58) is still valid; consider

60) *Sylvia is sticking pins in her voodoo doll of Idi Amin, but it may take her a while to bring it about.

But Ross's syntactically-based analysis is now vulnerable. The same construction is operative in 59) as in 58), but Ross's analysis in principle cannot work in 59). Hence there is reason to question its validity in 58) as well.

III.B. A proposal: All antecedents are non-syntactic

The proposal to be developed in this section is radical: All anaphora is non-syntactic. Yet this is not intended to deny syntactic anaphora, but to admit both simultaneously. Anaphora seems to have 2 faces, corresponding to 2 radically different theoretical perspectives: frame semantics and generative grammar. The one perspective is basically world-oriented, the other syntax-oriented; the one performance-oriented, the other competence-oriented. Each is a natural vehicle for articulating certain linguistic ideas which are unstateable or incomprehensible in the other. Hence even a valid argument couched in such phrases as "But your theory can't handle such-and-such" does not ipso facto annul the theory under attack. Frame semantics and generative grammar may be simply incommensurable, forcing a theoretical dualism; or there may be a synthesis; or new advances may make both perspectives obsolete. I don't want this problem to get in the way in the following frame-oriented analysis of anaphora. (Objections will be discussed in section III.C. below.)

In section I.A. a large number of antecedent types were presented. Of these, I think the deepest split is between syntactic and non-syntactic antecedents. From a theoretical point of view, this dichotomy is inelegant. From a processing point of view it strikes me as bizarre. On the one hand, some kind of apparatus is needed for handling non-syntactic anaphora by reaching into the discourse frame. On the other hand, generative grammar has a rather elaborate apparatus for pairing anaphors directly with syntactic antecedents in some tree or relational network. What seems untenable is that, in the course of language use, we should be constantly flipping back and forth between 2 such different kinds of mechanisms.

This argument can be carried further. If John walks into the middle of a conversation between Pat and Sue about "he" or "it", he can usually scrabble together enough elements of the discourse to join in intelligently, without the antecedents ever being

mentioned. A commonplace of artificial intelligence is that humans operate quite well in imperfectly and incompletely specified frames. But these considerations lead to an anomaly in a syntactic-antecedents theory. For John, all the sentences mentioning "he" or "it" do not have a syntactic antecedent for the anaphors. Thus, although Pat and Sue are using their anaphors with respect to a syntactic antecedent, John must set up a non-syntactic antecedent in the discourse frame. That is, the difference in anaphor usage for John versus Pat-and-Sue is not just a matter of degree (Pat and Sue know exactly who/what they're talking about, while John only gradually comes to know), but one of kind. This is counterintuitive.

Moreover, it's not even clear when "it" should or shouldn't be viewed as taking a syntactic antecedent. Compare 61) and 62):

61) A: ...and then we'll blow up the White House. That's my plan.
B: It's crazy enough that it just might work.
62) A: ...and then we'll blow up the White House.
B: It's crazy enough that it just might work.

In 61), "it" is immediately preceded by a blatant and appropriate syntactic antecedent "plan". But do we really want to say that "it" in 61) and 62) are being used differently? In terms of real human usage, I am inclined to think that "it" in both sentences refers to exactly the same thing.

A further argument: It seems counterintuitive that human speech processing should require all syntactic NP's used at time t_0 to be directly accessible in memory as NP's for an indefinitely long period of time after t_0. This needs to be examined psycholinguistically, obviously. For example, interrupt a speaker at random and unawares and ask him to repeat verbatim whatever he just said.

Finally, the following extended example should illustrate the pitfalls of insisting on syntactic anaphora. Art and Bob are working together on Sunday in an otherwise empty building. Art is expecting a visit from Sarah, whom Bob does not know. Sarah arrives when Art is out having lunch, waits in silence a few minutes, then leaves. Art returns late, in a desperate hurry, and the following dialogue ensues:

63) Art (frantic): Is Sarah still here?
Bob: i) No, she just left, whoever she was. OR
?ii) No, she isn't. OR
?*iii) Who's she?

The varied acceptability of the responses makes sense if we think in terms of the discourse frame hurriedly set up between Art and Bob. Art sets up a frame where his friend Sarah is or isn't here, and he presses Bob for a response. Bob has in mind not Sarah at all, but a deictic antecedent "the girl who was here for the last hour", and his answer in i) makes clear to Art what frame Bob has in mind (quite a different one from Art's). Response ii) is odd

because Bob delivers a definite categorical response, giving Art the impression that Bob is operating legitimately in Art's frame, which is not so at all. Response iii) is uncooperative; Bob is saying only "I can't work in your frame", a quibble in light of the obviousness in context of what Art must be talking about. Note that only in the worst response iii) can "she" properly be said to have the antecedent "Sarah". This tangle (which has traditionally fallen under the heading of "opacity") is obfuscated by insisting that Sarah be the syntactic antecedent of "she". What is at stake instead is the compatibility of frames between speakers. Other similar examples:

64) A: Which way did he go? B: He went thataway!
65) A: Can you check if the tall blond man with one black shoe is in the next room?
B: (Checks)
i) Yeah, but he's not blond.
?ii) Yeah, but he's not tall and both shoes are black.
*iii) Yeah, but he's/ she's a woman.

III.C. Objections to the proposal

It remains to consider the other face of anaphora, and the huge weight of objections to a proposal which would pull all antecedents out of the discourse frame. For the past 15 years, generativist linguists have been amassing syntactic wellformedness conditions on anaphora. To name only a few, studies involving command-and-precede relations (Ross and Langacker), crossover phenomena (Postal), anaphoric islands (Postal), picture nouns (Jackendoff), sloppy antecedents, and missing antecedents (Postal/Grinder) have presented essentially syntactic criteria which constrain the use of anaphora with syntactic antecedents. The Postal/Grinder article "Missing Antecedents" is especially direct and explicit in rejecting the legitimacy of non-syntactic antecedents:

66) ... the Interpretive approach is logically committed to a theory of antecedent-anaphor relations in which the antecedents are, in some cases at least, not syntactic elements. The lack of generality involved in such a view is no doubt an immediate serious deficiency of this theory, although we can imagine an enthusiast attempting to regain generality ... by claiming that all antecedent-anaphor relations are non-syntactic. This is obviously an impossible view since such relations are in general governed by a variety of (often quite ad hoc and semantically arbitrary) syntactic constraints ...

To account for all these phenomena naturally in non-syntactic terms is probably an impossible and misguided project. I would, however, like to at least mention a couple of more frame-oriented counter-analyses.

Functionalism has tried to explain various putatively syntactic grammatical phenomena in terms of the real-life speech

situation and what language users are trying to do with language. For example, Kuno discusses anaphoric pronominalization in such terms as known information, discourse topic, predictable theme, etc. The following representative quotes would translate quite smoothly into frame terms:

67) Backward Pronominalization requires that the referent of the pronoun be "determinable" or "predictable" from the preceding context. (Kuno; also 68,69)
68) Acceptability of a given sentence involving backward pronominalization depends partly upon ... dream[ing] up a context in which the referent of the pronoun is the topic of the discourse.
69) ... writers can violate the Predictability Requirement on Backward Pronominalization ..., [and] can leave many things unsaid, leaving room for the reader's imagination.

In the same spirit, I would like to respond to one of Postal/Grinder's most telling points in their argument for the syntactic nature of missing antecedents (and of anaphora in general), namely non-semantic gender (pp. 280-283). Thus in German:

70) Hans wollte keinen Fernseher kaufen aber ich wollte es und er/*es/*sie war teuer.

If we change "der Fernseher" to "das Television", the gender switch from masculine to neuter forces the anaphor to change from "er" to "es", a change with no semantic motivation whatever. It is asserted that "the claim that Semantic Representations themselves contain arbitrary gender markings ... is obviously an intolerable consequence ...[since] the basic function of Semantic Representations ... is to provide identical representations for structures with the same meaning." How can we make any sense of non-semantic gender agreement except in terms of syntactic anaphora?

Postal/Grinder's observations hold for written language, and quite reasonably so in light of the discussion in section I.E. on written language (especially items 1,2). In spoken language, several pragmatic objections can be raised:

1. In cases of conflict between grammatical and natural gender, either can prevail in some languages in some instances:

71) Obwohl das Mädchen schön ist, hat sie/es gar keine Freunde.

2. In 71), I suspect that "sie" would become increasingly likely the greater the separation between anaphor and antecedent. Under this hypothesis, the anaphor would drift toward whatever gender is semantically unmarked in context --- neuter for things or concepts, masculine/feminine for people.[6]

3. Merely the fact that the anaphor agrees in gender with its antecedent does not constitute proof that the antecedent must be syntactic. In a frame-oriented theory, given any object in the

frame we can call up at will a welter of particular facts and associations involving that object. Necessarily these include lexical information, vocabulary items at a bare minimum; and non-semantic gender is just part of a vocabulary entry. I suggest that the anaphor "er" in 70) does not then refer back to a syntactic antecedent but to the concept of a television in the discourse frame, and that one of the things German speakers know about televisions is that they are called "der Fernseher".

4. What to do, then, about the Fernseher/Television agreement pattern noted for 70)? If a language provides 2 "exact synonyms" for a concept, it seems reasonable that for cognitive efficiency a speaker will give strong preference to one. On this view, a German speaker's automatic verbalization of "television" will be Televison or Fernseher fairly consistently, one or the other, and the anaphoric pronoun will also be selected consistently. In the most extreme case, a speaker might simply never say one or the other words, which removes the problem. There's room here for much interesting psycholinguistic experimentation. In particular, no matter how far removed the anaphor and "syntactic antecedent" are, I predict speakers should hardly ever make gender-agreement errors with highly codable things, i.e. things which have one clear dominant name in the language; while with poorly codable things, agreement should exhibit the drift-to-unmarkedness tendency noted in 2. above.

A hypothesized explanation in non-syntactic terms has been provided for what speakers do with respect to anaphor-antecedent agreement. As for hearers, confronted in a normal speech setting with an incorrect anaphor "es" in 70), would they consider the sentence ungrammatical? I suggest that they usually just wouldn't notice in real-time speech, unless "Fernseher" and "es" were almost right next to each other. This too can be checked psycholinguistically.

The arguments in the last 2 paragraphs may smack of sophistry. Yet I can think of no way an informant could ever give a naive introspective grammatical judgment for spoken language except by asking himself:

1. Would I say it?
2. Would I notice anything un-English (or whatever) if I heard it?

If the answers to these questions are respectively "Yes" and "No", the sentence is grammatical in spoken language. What I have tried to do is to ask these questions here in looking at non-semantic gender, and suggest ways of answering in non-syntactic terms --- a kind of explanation which cannot be pursued at all in a syntax-oriented theory.

IV. Summary

Any theory of language that is concerned with such notions as anaphora and coreference must take cognizance of the fact that it is often impossible, and sometimes obfuscatory or wrong, to insist that anaphors must have syntactic units as antecedents.

In fact, non-syntactic anaphors are extremely common in spoken language, probably just because of their vagueness --- they give the speaker a lazy alternative to precise linguistic articulation of concepts. The fact that for the most part non-syntactic anaphora can be discussed comfortably in the (admittedly fuzzy) terms of frame semantics is encouraging, both with respect to making sense of the phenomenon and with respect to confirming the usefulness of a frame approach.

NOTES

[0]Work reported in this paper was partly supported by a Graduate Fellowship from the National Science Foundation.

[1]I have borrowed this term from Bolinger. It should be mentioned, however, that Bolinger seems to feel "deixis" is not anaphora.

[2]A frame is a slice of the world, whatever piece of human experience is being evoked at any moment during speaking or hearing or writing or reading. This "definition" is intentionally vague and non-formal. The notion of a frame makes sense pre-theoretically on an everyday intuitive level, quite independently of the many suggested formalisms, and would continue to be a central notion in semantics even if there were no formalism.

[3]This attractive idea was suggested to me by Chris Smeall.

[4]It's interesting that many languages have a few ordinary nouns which can be "semantically vacuous" and as such function quite like anaphoric pronouns --- e.g. English things, matter, stuff; French truc; Hebrew ʕinyan, davar; Arabic ʔamr, šaʔn, šayʔ .

[5]Much the same notion was dealt with by Robin Lakoff in "Remarks on This and That".

[6]I am indebted to Ariel Bloch for this suggestion.

[7]The notion of codability appeared originally in Brown & Lenneberg, and has figured more recently in the work of Chafe and others.

BIBLIOGRAPHY

Bloch, Ariel, "Direct & Indirect Relative Clauses in Arabic", 1976, ms

Bolinger, Dwight, "Ambient It Is Meaningful Too", Journal of Linguistics, 9:2, Sept 1973, pp. 261-270

Borkin, Ann, "Coreference and Beheaded NPs", in Papers in Linguistics

Brown, Roger & Lenneberg, Eric, "A Study in Language and Cognition", Journal of Abnormal & Social Psychology, 49:3, July 1954, 454-462

Fillmore, Charles, "Deixis I & II", ms

Fillmore, Charles, "An Alternative to Checklist Theories of Meaning", BLS I, 1975

Kuno, Susumo, "Three Perspectives in the Functional Approach to Syntax", CLS XI Paravolume on Functionalism, 1975

Lakoff, Robin, "Remarks on This and That", CLS X, 1974

Minsky, Marvin, "A Framework for Representing Knowledge", in Winston, Patrick, The Psychology of Computer Vision, McGraw Hill, 1975

Postal, Paul & Grinder, John, "Missing Antecedents", Linguistic Inquiry, 2:3, 1971

Ross, John R., "Three Batons for Cognitive Psychology", in Palermo & Weimer, Cognition and the Symbolic Processes, Wiley, 1974